

WHAT IS CLAIMED IS:

SUB 501
1. A camera for getting information upon three-dimensional shape, comprising:

an image taking device for taking an image of an
5 object within a region to be photographed;

a projector for projecting a pattern light on the region; and

a monitor for displaying the image of the object which the image taking device takes, in which the monitor
10 has a memory for storing the image of the object the image taking device takes when the projector does not project the pattern light on the region,

wherein the image taking device takes a projection pattern which is formed on the object within the
15 region by the pattern light that the projector projects, and

wherein the monitor displays the image, stored in the memory, of the object, instead of the image of the object the image taking device takes with the projector
20 projecting the pattern light on the region.

2. The camera as claimed in claim 1, wherein the pattern light is not a uniform light and has a distribution of illuminance, and

wherein the projection pattern which is formed on
25 the object within the region by the pattern light comprises

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5. The camera as claimed in claim 4, wherein the display part displays the image of the object the photographing part photographs while the projector does not project the light having the predetermined pattern on the

object.

Sub 6. The camera as claimed in claim 4, wherein the
cont light having the predetermined pattern is not a uniform
light and has a distribution of illuminance, and

5 wherein a projection pattern which is formed on
the object by the light having the predetermined pattern
comprises at least one stripe.

7. The camera as claimed in claim 4, wherein the
light having the predetermined pattern comprises a colored
10 light, and

wherein a projection pattern which is formed on
the object by the light having the predetermined pattern
comprises a colored part.

8. A camera which is able to get information upon a
15 three-dimensional shape of an object, comprising:

an image taking part for successively taking an
image of the object;

a first memory for successively and temporarily
storing the image of the object the image taking part
20 takes;

a display part for renewing and displaying the
image of the object successively; and

a projector for projecting a light with a
predetermined pattern on the object,

25 wherein the display part displays the image of

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the object stored in the first memory prior to a projection of the light with the predetermined pattern by the projector, instead of the image of the object the image taking part takes, when the image taking part takes the image of the object in a state in which the projector projects the light with the predetermined pattern.

9. The camera as claimed in claim 8, which further comprises a second memory for storing the image of the object the image taking part takes, wherein the second memory outputs the image of the object, thus stored, to the first memory successively.

10. The camera as claimed in claim 9, wherein the second memory stores the image of the object the image taking part takes, and the image of the object stored in the second memory is prohibited from being outputted to the first memory, when the image taking part takes the image of the object in the state in which the projector projects the light with the predetermined pattern.

11. The camera as claimed in claim 8, wherein the display part is prohibited from renewing the image of the object when the image taking part takes the image of the object in a state in which the projector projects the light with the predetermined pattern.

12. The camera as claimed in claim 8, wherein the light with the predetermined pattern is not a uniform light

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